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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/558,302	04/25/2000	William J. Hillery	10970913-2	9699

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Agilent technologies  
Legal Department 51UPD  
Intellectual Property Administration  
PO Box 58043  
Santa Clara, CA 95052-8043

EXAMINER

BAYARD, EMMANUEL

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 10/24/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/558,302

Applicant(s)

HILLERY ET AL.

Examiner

Emmanuel Bayard

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 8/5/03.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 17-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-20 is/are rejected.
- 7) ☒ Claim(s) 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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### **DETAILED ACTION**

1. This is in response to request for reconsideration filed on 8/5/03 in which claims 17-21 are pending. The applicant's request has been fully considered but they are moot based on the new ground of rejection. (See examiner new rejection and examiner response).

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noguchi et al U.S. Patent No 5,079,513 in view of Hirschenberber et al U.S. Patent No 5,400,188.

As per claim 17, Noguchi et al discloses a demodulator (see abstract and fig.1 and element 2 and col.4, line 1 and col.7, lines 25-26) having a power approximation circuit coupled to receive a real and an imaginary component of a complex signal (see figs.1, 4-5, 7 element 3 and col.5, lines 6-11) the power approximation circuit generating an approximate power (col.5, lines 6-11) value which indicates an actual power value for the complex signal by an adder which is considered to the claimed (combining) (see figs.1, 4-5, 7 element 25 and col.7, lines 42, 51)

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absolute values of the real and imaginary components (see figs.1, 4-5, 7 elements 34, 35 and col.7, lines 41-51).

However Noguchi et al does not teach applying a expectation function to the combined absolute values.

Hirschenberger et al teach applying an averager function (see fig.2 element 24) to a combined absolute values (see col.3, lines 12-44). Note that, in page 3, paragraph 5 of the response, applicant describes the expectation function as an average function. Therefore the averager of Hirschenberger is functionally equivalent to the claimed (expectation function).

It would have been obvious to one of ordinary skill in the art to implement the averager of Hirschenberger into Noguchi as to minimize the variance of Gaussian noise present in the data samples as taught by Hirschenberger (see col.3, lines 20-25).

As per claim 18, Hirschenberger includes detection of at least one signal-to-noise ratio (see col.1, lines 42-45 and col.3, lines 20-25 and col.5, lines 37-45). Furthermore implement such teaching into Noguchi would have been obvious to one skilled in the art as to minimize the variance of Gaussian noise present in the data samples as taught by Hirschenberger (see col.3, lines 20-25).

As per claims 19 and 20, the demodulator of Noguchi et al includes an external processor (see col.8, lines 34-35) which includes a lookup table (see fig.12 and col.10, lines 55-56) that maps the approximate power value.

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***Allowable Subject Matter***

4. Claim 21 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter: the present invention teaches a demodulator having a power approximation circuit. The closest prior art of Thesling et al teaches a similar demodulator. However the closest prior art fails to anticipate or render obvious the recited features "a blind equalizer that generates a filter output signal in response to an information signal according to a transfer function which adapts in response to a selected error indication and a circuitry for providing the selected error indication by switching among a set of differing error indications in response to a determination of a relationship between the actual signal-to noise ration and a threshold signal to noise ratio". In combination with the rest of the system, these distinct features have been cited in dependent claim 21, and render it allowable.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Zhou et al U.S. Patent No 5,751,624 teaches a complex number calculation.

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Pride, III et al U.S. Patent No 5,524,120 teaches a digital low power symbol rate detector..

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is (703) 308-9573. The examiner can normally be reached on Monday-Thursday from 8:00 AM - 5:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour , can be reached on (703) 306-3034. The fax phone number for this Group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3800.



Emmanuel Bayard

Primary Examiner

October 15, 2003